

potentially plays an important role in selection of appropriate social meaning. Our findings may have relevance to understanding mechanisms underlying prodromal social dysfunction, which may be targeted in future remediation interventions.

## **Symposium 14: The body and the self**

*Friday 24 September 09:00 – 10:30*

*Symposium chaired by Gabriella Bottini*

The sense of ownership of body parts is a crucial component of a normal body representation. There are a number of neurological and psychiatric diseases that may induce a profound impairment of this body image. Right cerebral damage for example are frequently associated with motor anosognosia and a delusional feeling of non belonging of one's own paralyzed limb, somatoparaphrenia. As these two symptoms are almost invariably linked, their lesion correlates are still contradictory also considering the limited number of anatomical group studies. Furthermore whether motor anosognosia relies on the spared functioning of the intention-programming system is still unclear. Hysteria dramatically changes self body awareness and motor volition and these manifestations have been explained in terms of inhibitory control processes; similar mechanisms have also been proposed for the hypnotic state. However no information is available for the neural circuits involved in such situations. The compulsive need of non psychotic individuals to have one of more of their extremities removed still represents an enigma as there is no evidence of a clear neuropsychological dysfunction underlying this incongruity between the body and the self.

In this symposium an attempt to discuss the issue of the body and the self will be made in the frame of neurological and psychiatric symptoms which may help in clarifying some anatomical, neurophysiological and cognitive processes underpinning self awareness and body representation.

### **Can non-veridical body awareness influence action execution? Evidence from anosognosia for hemiplegia**

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In anosognosia for hemiplegia (i.e., unawareness of motor deficits), body awareness may be so impaired that patients believe that they have moved the paralyzed limb. We recently argued that this impaired awareness may rely on the spared functioning of the intention-programming system. Accordingly, we have predicted that during bimanual motor acts, anosognosics would have shown an influence of intended (but unexecutable) contralesional hand movements on the (actual) ipsilesional hand movements (bimanual coupling effect). Here we discuss the effects of 'proximal' and 'distal' components of the intended action on execution. In the first study, anosognosics were requested to reach for easy target (near/large) with one hand and difficult target (far/small) with the other. The right hand's movement times towards the easy target slowed down when patients claimed having moved it together with the left (plegic) hand towards the difficult target. In the second study, patients had to perform bimanual congruent movements (both hands drew vertical lines) and bimanual non-congruent movements (right hand drew a vertical line, left hand a circle). The right hand trajectory in bimanual non-congruent movement was ovalized with respect to the non-congruent condition. Our results indicate that the defective body awareness in anosognosics arise from the intention-programming system which affects the motor parameters of the unimpaired limb when patients have the false belief of simultaneously moving the impaired limb.